



UNITED STATES PATENT AND TRADEMARK OFFICE

fran
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,454	08/14/2001	Haruhiko Murata	P107314-00024	6436
4372	7590	06/06/2006	EXAMINER	
AREN'T FOX PLLC 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			AGGARWAL, YOGESH K	
			ART UNIT	PAPER NUMBER
			2622	

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/928,454	MURATA ET AL.	
	Examiner	Art Unit	
	Yogesh K. Aggarwal	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 March 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 10-21 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4 and 6-9 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

Election/Restrictions

1. Applicant's election with traverse of claims 1-4 and 6-9 associated with figure 1 (Species 1) in the reply filed on 08/23/2005 is acknowledged. The traversal is on the ground(s) that the subject matter of all species is sufficiently related that a thorough search for the subject matter of any one species would encompass a search for the subject matter of the remaining species. This is not found persuasive because the non-elected species contain features, which would not be included in a class/subclass search or text search for the elected species.

However, the applicant is reminded that upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

2. The requirement is still deemed proper and is therefore made FINAL.
3. This application contains claims 5 and 10-21 drawn to an invention nonelected with traverse in Paper dated 08/23/2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Response to Arguments

4. Applicant's arguments with respect to claims 1-4 and 6-9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 4, 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenaka et al. (US Patent # 5,552,827) in view of Kurashige et al. (US Patent # 4,911,552)

[Claim 1]

Maenaka et al. teaches a color separation circuit (figure 1) of a single chip color camera for subjecting a signal from a solid-state image pick-up device having a plurality of types of color filters which differ in spectral sensitivity characteristics arranged therein, respectively, so as to correspond to pixels to color separation processing, comprising:

a plurality of types of interpolation processing means for respectively producing a plurality of chrominance signal components at the arbitrary pixel to be processed and suitable for a case where there is a strong correlation in each of a plurality of types of directions centered at the pixel to be processed from the chrominance signal components at the pixel to be processed and the pixels around the pixel to be processed (figure 1, horizontal and vertical interpolation 62 and 64 generating chrominance signals Gh, Rh, Bh, Gv, Rv, Bv col. 4 lines 47-67);

correlated value detection means for detecting the direction in which there is a strong correlation out of the plurality of types of directions centered at the pixel to be processed on the basis of the chrominance signal components at the pixel to be processed and the pixels around

the pixel to be processed (figure 1, horizontal and vertical correlation detection 66 and 68, col. 5 lines 1-11, col. 8 line 66-col. 9 line 32); and

means for finding the plurality of chrominance signal components at said pixel to be processed on the basis of the direction in which there is a strong correlation which is detected by the correlated value detection means and each of the chrominance signal components produced by the interpolation processing means (figure 1, weighted addition means 74 generating G_o , R_o and B_o , col. 5 lines 12-32).

gain control means for controlling a gain for each of the color filters being provided in a stage preceding the correlated value detection means (figure 1, AGC 32),

the correlated value detection means detecting the direction in which there is a strong correlation out of the plurality of types of directions centered at the pixel to be processed on the basis of signals at all the pixels in a block composed of M by N pixels centered at the pixel to be processed which are inputted through the gain control means (col. 5 lines 1-11, col. 8 line 66-col. 9 line 32).

Maenaka teaches a gain control means preceding the correlated value detection means but fails to teach a digital gain control means for separately controlling a gain for each of the color filters being provided in a stage preceding the correlated value detection means. However Kurashige et al. teaches digital primary color signals S_r , S_g and S_b that are applied to input terminals 1R, 1G, 1B to variable gain amplifiers 2R, 2G and 2B respectively (figure 4, col. 4 lines 40-52). Kurashige also teaches correlation detection between odd and even fields with a gating pulse (col. 10 lines 57-66).

Therefore taking the combined teachings of Maenaka and Kurashige, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have a digital gain control means for separately controlling a gain for each of the color filters being provided in a stage preceding the correlated value detection means in order to improve the precision of the white balance correction.

[Claim 2]

Maenaka shows the AGC control means 32 for carrying out the gain control on the basis of color information generated from a CCD (figure 1).

[Claim 4]

Maenaka teaches that the horizontal and vertical interpolation means (62 and 64) performs interpolation for horizontal and vertical directions when a correlation in those directions is strong and generate chrominance signals Gh, Rh, Bh, Gv, Rv, Bv on the basis of L0, L1 and L2 signals (L0, L1 and L2 signals inherently have a luminance and chrominance components) after the gain control means processing is processed by the AGC 32 (col. 4 lines 47-67).

[Claim 6]

Claim 6 is similar to claim 1 except a weighting and addition means for weighting each of the chrominance signal components produced by the first interpolation processing means, weighting each of the chrominance signal components produced by the second interpolation processing means, and adding the weighted chrominance signal components depending on the correlated values in the horizontal direction and the vertical direction which are calculated by the correlated value calculation means, to find the plurality of chrominance signal components at the pixel to be

processed. Manaka teaches a weighted addition means 74 generating chrominance components Go, Ro and Bo, col. 5 lines 12-32 and figure 1.

[Claims 7 and 9]

See Examiner's notes regarding claims 2 and 4.

7. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maenaka et al. (US Patent # 5,552,827), Kurashige et al. (US Patent # 4,911,552) and in further view of Nakayama (US Patent # 4,750,032).

[Claims 3 and 8]

Maenaka in view of Kurashige shows a particular color filter pattern is a primary color filter (figure 1b) but fails to teach if the gain control means is used for white balancing. However Nakayama teaches an automatic white balance adjusting system for a color video camera that uses an automatic gain controller 6 and 7 for red and blue signals and a matrix for a luminance signal Y (col. 2 lines 35-55, figure 3). Therefore taking the combined teachings of Maenaka, Kurashige and Nakayama, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have a gain control means being used for white balancing in order to have a system that is easy to adjust the white balance by simply changing the gain control levels.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA
June 1, 2006



DAVID OMETZ
SUPERVISORY PATENT EXAMINER